

WE CLAIM

1. A novel polymer support for solid phase peptide synthesis comprising polystyrene backbone and propoxylate function of hexanedioldiacrylate crosslinks having optimum hydrophilic/hydrophobic balances.
2. A Polymer support as claimed in claim 1 wherein the said support has high coupling efficiency and it also suppresses  $\beta$ -sheet formation.
3. The polymer support as claimed in claim 1, wherein the polymer is HDPA-PS.
4. The polymer support as claimed in claim 1, shows effective swelling in polar and non-polar solvents and stable enough to withstand all vigorous peptide synthetic conditions.
5. A process for preparing the novel polymer support as claimed in claim 1 comprising the step of:
  - subjecting a monomer and a crosslinker to a step of a suspension polymerization using initiator;
  - adding a definitive amount of diluent to the said suspension polymerization mixture to obtain a organic mixture;
  - dispersing the said organic mixture in to a polar dispersion medium containing 0.5-1.9.% of a stabilizer,
  - agitating the said organic mixture mechanically to obtain the polymer in the form of beads.
6. A process as claimed in claim 5 wherein the reaction was carried out at 75 to 90°C for 5 to 8 hours.
7. The process as claimed in claim 5, wherein the monomer used is styrene.
8. The process as claimed in claim 5 wherein the crosslinker used is hexanediolpropoxylate diacrylate.
9. The process as claimed in claim 5 wherein the initiator used is benzoyl peroxide and the diluent used is toluene.
10. The process as claimed in claim 5 wherein the size of the polymer was controlled by the speed of rotation.

11. The process as claim in claim 5 wherein the polymer support HDPA-PS under goes the step of chloromethylation for introducing chloromethyl group to the said support, followed by the step of hydrazinolysis to convert the chloromethyl group to amino group.
12. The process as claimed in claim 11 wherein the step of chloromethylation is done by using chloromethylmethylether in the presence of Lewis acid catalyst.
13. The process as claimed in claim 11 wherein the step of hydrazinolysis is conducted by using potassium phthalimide followed by hydrazine hydrate.